Risk factors and early detection of lung cancer in a cohort of Chinese tin miners

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Abstract: PURPOSE: To examine risk factors and establish a biologic specimen and data bank for the study of early markers of lung cancer. METHODS: We designed a dynamic cohort using an ongoing lung cancer screening program among radon- and arsenic-exposed tin miners in Yunnan China. Through the first four years of the study, 8,346 miners aged 40 years and older with over 10 years of occupational exposure have been enrolled, risk factors have been assessed, annual sputum and chest radiographs have been obtained, and numerous biologic specimens have been collected. RESULTS: A total of 243 new lung cancer cases have been identified through 1995. Radon and arsenic exposures are the predominant risk factors, but lung cancer risk is also associated with chronic bronchitis and silicosis, as well as a number of exposure to tobacco smoke, including early age of first use, duration, and cumulative exposure. Tumor and sputum samples are being examined for early markers of lung cancer. CONCLUSION: A cohort of occupationally-exposed tin miners with an extensive biologic specimen repository has been successfully established to simultaneously study the etiology and early detection of lung cancer.